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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,732	12/10/2001	Elmer S. Hung	MIT8178CONT	6972

7590

03/12/2003

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EXAMINER

ADDISON, KAREN B

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/015,732

Applicant(s)

HUNG ET AL.

Examiner

Karen B Addison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-22 is/are allowed.
- 6) ☒ Claim(s) 1,4-7,9-12 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 2,3,8 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/537,936.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

**DETAILED ACTION**

***Allowable Subject Matter***

1. Claims 20-22 allowed.
2. Claims 2,3,8,13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Drawings***

3. Figure 22 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1,4-7,9-12, and 14-19 is rejected under 35 U.S.C. 102(e) as being anticipated by APA (22 line 8-15 is a schematic side view of an electrostaically programmable diffraction grating element provided by the invention for the Ricco U.S. No. 5757536 polychromator system incorporated by reference.)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

APA discloses in fig.22 an electrostatically-controllable diffraction grating comprising: a plurality of electrically isolated and stationary electrodes(208a-e) disposed on a substrate(200); and at least one row of a plurality of interconnected actuation elements(212,213,214); each actuation element in a row suspended, by a corresponding mechanically constrained support region(216-c), over the substrate by a vertical actuation gap(go), and each actuation element, including a conducting actuation region(204) is connected to the corresponding actuation support region(218a-c) and disposed in a selected correspondence with at least one substrate electrode(220a); a mirror element (230) provided for at least one actuation element in at least one row of actuation elements(212), each mirror element(230) including an optically reflecting upper surface and being vertically suspended over a corresponding actuation element(212) by a mechanically constrained mirror support region(208a-e)

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connected to the corresponding actuation element(220a-b) and defining a vertical mirror gap( $g_0$ ), each mirror element including a mirror deflection region connected to the mirror support region and free to be deflected through the mirror gap; and wherein the mirror gap of a mirror element is less than the actuation gap( $g_1$ ) of a corresponding actuation element(212) and is selected to produce controlled and stable displacement of the actuation region of a corresponding actuation element through a displacement range to a specified point in the actuation gap when an actuation voltage(18) is applied between an actuation region and a corresponding stationary electrode(208a-b), for diffracting a beam of light incident on the grating as the light beam is reflected from the upper surfaces of the mirror elements(230). APA also discloses, the optically reflecting mirror elements having a gold layer and the substrate made of silicon having a insulating layer.

Wherein, the electrodes (208,220), actuation elements(212), and mirror elements(230) comprise polychrystalline silicon. APA also discloses a mirror element (230) provided for at least one actuation element in each row of actuation elements. Wherein, the optically reflecting upper surface of at least one mirror element provided for a row of actuation elements is characterized by a substantial planarity and by a substantial parallelism with the optically reflecting upper surface of at least one mirror element provided in another row of actuation elements(208a-e), the upper surface planarity and parallelism being maintained as a corresponding mirror deflection region is deflected through the mirror gap( $g_0$ ).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B Addison whose telephone number is 703-306-5855. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1317. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KBA  
March 10, 2003

*Thomas M. Ruppert*

2003